Trigonometopus vittatus Loew.

A single specimen before me, taken by Mrs. A. T. Slosson at Biscayne Bay, Florida, agrees with Loew's description in most particulars. The wing coloration indicated by Loew is like that of the species just described. In the present specimen the difference between the yellowish anterior portion of the wing and the smoky posterior portion is but weakly indicated; the dark shade appears to begin behind the third vein, instead of in front of it, thus leaving a pale streak along the anterior margin of the first posterior cell. No trace of the distal extension of the dark shade to the costa at the tip of the second vein, as indicated by Loew, is perceptible, nor is there any strong contrast in the coloration of the veins in the two regions. Another difference occurs in the coloration of the abdomen; this may, however, be due largely to the condition of the specimens, since the insect is said to have an entirely pale abdomen in life. In Loew's specimen the abdominal segments are said to have basal dark bands, while in the specimen before me these bands are apical. It is possible that the Florida specimen represents a distinct species, but the variability shown by the three specimens of *T. albifrons*, and the paucity of material, indicate a conservative course.

PROTHETELY IN THE LARVA OF *PHOTURIS PENNSYLVANICA* DE GEER.

By Francis X. Williams,
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The term prothetely (προθεῖν, to run before, and τέλος, completion) was proposed by Kolbe in 1903, who applied it to that condition found in insect larvæ in which the imaginal discs have developed with abnormal rapidity resulting in the production of larvæ with pupal or imaginal characters.

Prothetely, though not of common occurrence, has been noted chiefly in coleopterous larvæ, being there represented by external wing-pads, adult legs, additional antennal joints, modified mouth-parts, abdominal tergites, etc., one or several of these peculiarities occurring in a single larva.

In the fall of 1913, the writer collected upwards of one hundred larvæ of our common large firefly, *Photuris pennsylvanica* DeG., in the Arnold Arboretum, adjoining the grounds of the Bussey Institution. These larvæ, ranging from about 13 to 18 mm. long, were in the second and last year of their growth. Under natural conditions they should have pupated in May or June of 1914, and produced adults a few days later, but, owing to the fact that they were kept under artificial conditions, adults emerged in late winter as well as in summer.

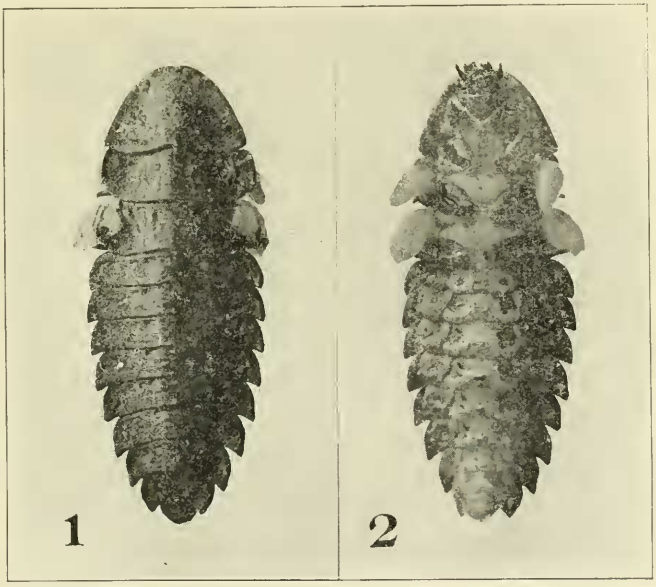

Fig. 1. Prothetelous larva of *Photuris pennsylvanica* De Geer. 1, dorsal view; 2, ventral view.

As secured in the field, these larvæ appeared to be perfectly normal. They were examined from time to time in the laboratory, and on May 27, 1914, an individual was found with a pair of well developed wing-pads on the meso- and metathorax. Two days later another such larva was discovered. Photographs were taken showing the dorsal and ventral view of one of these larvæ anæsthetized with chloroform, and are reproduced above. It will be seen that the wing-buds are here much smaller than the wing-cases of

a pupa, but similarly situated; they are quite symmetrical and are developed just under the heavily-chitinized tergites which they reflex a little. The buds of the metathorax representing the wings are slightly larger than the elytral buds; in one specimen they are almost entirely covered with brown chitin, in the other the buds of the metathorax are largely of a whitish color and their bases show through the tergite as white subcircular areas.

Prothetely has been noted by a number of observers: Heymons (1896)[1] found it in the larva of *Tenebrio molitor;* Busck (1897)[2] observed it in six larvæ of *Anthrenus varius;* Riley (1908)[3] speaks of a prothetelous larva of a pyrochroid beetle, *Dendroides canadensis.* In lepidopterous larvæ Hagen (1872)[4] and others mention the silkworm, *Bombyx mori*, and Kolbe (1903)[5] the Lasiocampid, *Dendrolimus pini.*

As aforesaid, prothetely appears to occur most frequently in the Coleoptera, and Riley[3] offers as an explanation of this, the fact that the wing rudiment in most coleopterous larvæ is according to Tower 'not sharply marked off from the body hypodermis and is usually directly evaginated to form the imaginal organ.' The step from this condition to an external wing-pad would be comparatively simple, which would not be the case in the Lepidoptera and the Diptera for example, for here the wing rudiment is well differentiated from the body hypodermis, for the former is invaginated and thus lies in the body cavity, a condition designated by Tower as the "enclosed type" of wing development.

Inasmuch as all the cases of prothetely noted occur only in larvæ kept under artificial conditions, this accelerated development is probably due in some way to these unnatural conditions. Strickland (1911)[6], is of the opinion that prothetely "is usually caused by keeping larvæ at an abnormally high temperature. This probably results in an increased supply of the enzymes which cause these histoblasts to develop."

Neither larva of *Photuris pennsylvanica* pupated; they lagged behind the other larvæ, being, so to speak, already partly in the

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[1] Heymons, R., 1896, Sitzungber. d. Ges. nat. Fr. Berlin, pp. 142-144.
[2] Busck, Aug., 1897, Proc. Ent. Soc. Wash., IV, p. 123.
[3] Riley, Wm. A., 1908, Ent. News, XIX, pp. 136-139.
[4] Hagen, H. A., 1872, Stettin. ent. Ztg., pp. 392-393.
[5] Kolbe, H. J., 1903, Allgem. Zeitsch. für Ent., Bull. 8, No. 1, p. 28.
[6] Strickland, E. H., 1911, Biol. Bull., XXI, pp. 313-327.

pupal stage. One did not attempt to pupate but sickened and died, the second formed a cell in late June and remained therein in an arched position for several days; it approached the form of a pupa, the larval skin softening considerably, and the imaginal eyes could be seen through this integument, but it perished without any ecdysis.

A NEW ANOPHELINE.

By C. S. Ludlow,

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The Anopheline to be described is an unusually brilliantly marked one, the very marked spotting of the legs and wings being at once noticeable. It probably lies nearest *ludlowii* but the wing markings are quite different, the palpal bands are all narrow, and the legs are very much more spotted than even the most distinctly marked specimen of *ludlowii* which I have seen.

Myzomyia parangensis sp. nov.

♀. Head brown covered with white and dark brown forked scales, the white ones on the vertex and spreading laterad about one-half the width of the eyes, the brown fork scales on the rest of the head except a long tuft of slender white scales projecting forward between the eyes; antennæ brown, verticels and pubescence white, a few white scales on the proximal joints, basal joint brown with "frosty tomentum"; palpi fairly heavily scaled, the scales outstanding, brown except a small white tip and narrow white bands at the base of the penultimate and at the base of the antipenultimate, the apical joint is very short; proboscis brown, labella light; clypeus brown; eyes brown.

Thorax; prothoracic lobes dark brown with long, yellow bristles; mesothorax a soft yellow, covered with "frosty tomentum" and sparsely by light yellow to white fine hair-like scales, more apparent in a median line of them, and long white scales projecting over the nape, but not confined to the very middle portion. A brown median line widening at the caudal margin, and continued still more broadly on the scutellum; scutellum much as mesonotum; pleura very dark brown with lines of white "frosty tomentum"; metanotum brown.

Abdomen dark brown covered with golden brown hairs, and a few long, light spatulate scales on the apex of the eighth segment; the genitalia are also covered with long spatulate scales.

Legs: coxæ and trochanters white; femora very markedly spotted or ringed in brown and white, there being no marked predominance of either color, the spots